Light blue crest sign visualized by magnifying endoscopy in normal colonic mucosa

Light blue crest (LBC), defined as a fine, blue-white line on the crests of the epithelial surface/gyri, is always discerned at the edge of marginal crypt epithelium [1]. The optical sign has high specificity for the endoscopic identification of gastric intestinal metaplasia [1]. It can only be visualized by magnifying endoscopy with narrow-band imaging or blue-laser imaging, and is caused by the reflectance of short-wavelength light (400–430 nm) on the microvillous surface of the epithelium [1, 2]. LBC is naturally seen in normal small intestine due to regular microvilli arrangement [1]. Herein, we describe the LBC sign in normal colonic mucosa. Colonic screening (GIF-H290Z; Olympus, Tokyo, Japan) was performed in a 40-year-old healthy man. When the colonic mucosa was fully dilated, the LBC sign could hardly be found. However, when the colon was partially collapsed and innominate grooves reappeared, creating a finely nodular surface, long linear LBCs could be seen in the corresponding grooves (►Fig. 1a, ►Video 1) or in tangential view of the colonic mucosa (►Fig. 1b). Dot- or rod-like LBCs could also be found in partial crypt openings (►Fig. 1c).

Numerous crypts of Lieberkühn and innominate grooves were observed on the surface of colonic mucosa by scanning electron microscopy [3]. Examination by light microscopy of sections treated with hematoxylin and eosin and with immunohistochemical stains revealed that several crypts of Lieberkühn opened into innominate grooves (►Fig. 2) [3]. Innominate grooves and the upper part of Lieberkühn crypts were lined by mature absorptive cells [3], which possessed closely packed regular microvilli [4]. In tangential view of colonic mucosa (namely, perpendicular view of microvillous longitudinal axis), LBCs can be obtained by magnifying endoscopy, with regular microvilli illuminated by narrow-band
blue light. No LBCs can be seen in normal gastric mucosa due to the lack of regular microvilli in foveolar epithelium [5].

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Competing interests

The authors declare that they have no conflict of interest.

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